300 ILLUSTRATIVE EXAMPLES of P2

Preventing the creation of pollutants can:

- reduce raw material costs,
- reduce energy costs,
- reduce waste disposal costs,
- reduce control equipment costs,
- reduce regulatory compliance costs, and
- reduce total operating costs.

301 REDUCE RAW MATERIAL COSTS

In Colorado, a non-profit, voluntary alliance of business, government and public interest groups, called the Pollution Prevention Partnership, was founded to promote pollution prevention. The first project was reducing the use of 1,1,1,-trichloroethane (TCA) by 70 percent. This goal was exceeded when TCA use was reduced by 95%. Participating companies expect to save millions of dollars due to the reduction in solvent usage. The partnership members have had other success stories and are conducting a technology outreach program to transfer information to other businesses, especially small and medium sized businesses.[1]

302 REDUCE ENERGY COSTS

Once all the costs have been counted, the total benefits of energy efficient operations often outweigh the lower power bill. In 1990 a textile firm replaced a gas dryer with a radio frequency dryer to dry cashmere, reducing the energy by about 50% and reduced fiber loss by about 5%. The energy savings was about $0.05 per pound of cashmere; the savings from lost raw fiber was more than $1.50 per pound. Other studies have confirmed that productivity benefits of energy efficiency projects often exceeds the energy cost savings. Pollution prevention seeks to eliminate waste and promote efficient use of raw material. Since wasted products have required significant energy inputs, preventing waste saves these energy costs as well as the energy costs of waste disposal. Besides

the mere cash savings in direct power costs, energy efficiency can:

- reduce production costs, including labor, raw materials, and energy
- improve product quality, reduce scrap or rework costs, improve customer satisfaction
- improve capacity utilization, and
- improve reliability.[2]

303 REDUCE WASTE DISPOSAL

Monsanto Company created a new "zero-waste" process for manufacturing a key component of the herbicide Roundup® and won an US EPA Green Chemistry Program Award in 1996. The company is saving $4 million per year which was spent managing the waste products.[3]

304 REDUCE CONTROL EQUIPMENT COSTS

A report assessing pollution prevention options in the wood furniture industry for compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) concluded that the coating emission limits encourage input substitution because installing and operating air emission control technology is costly and economically inefficient compliance method for most wood furniture manufacturers. [4]

305 REDUCE REGULATORY COMPLIANCE COSTS

Avoiding regulatory costs can be a powerful incentive to alter production practices. Changing the waste stream to prevent the creation of any hazardous waste is one way to avoid the higher costs of hazardous waste disposal, including the paperwork costs inherent in manifesting wastes. Partial reductions can bring significant costs savings when the lowered waste generation is subject to less extensive pollution management requirements. For example, a hazardous waste generator who reduces generation below key statutory levels, is able to comply with the small quantity generator provision of the Resource Conservation and Recovery Act (RCRA).[5] Echo Bay/Cove Mine changed solvents and was able to switch from large quantity generator to a conditionally exempt small quantity generator which reduced regulatory requirements and environmental liability and

a cost savings of $16,000 due to fewer training needs.[6]

Changing a facilities air emissions can reduce compliance costs with the provisions of the US Clean Air Act. A business with regulated emissions of only one hazardous air pollutant below the 10 tons per year threshold or 2 or more hazardous air pollutants below 25 tons per year is not subject to the Maximum Achievable Control Technology (MACT) standards for emissions of the 188 Hazardous Air Pollutants (HAPs). US EPA is incorporating specific pollution prevention options in the MACT rule making process whenever these compliance strategies are identified. For example, the MACT rule for the fabric printing, coating and dyeing industry is due in final form in November 2000. US EPA and the textile industry are looking for pollution prevention options which would reduce regulated emissions below the 10 and 25 ton per year thresholds for major sources. Facilities which do not emit Hazardous Air Pollutants may be subject to permitting requirements under Title V the US Clean Air Act depending upon the quantity and chemical composition of these emissions. Pollution prevention can also reduce these permitting compliance costs.

306 REDUCE TOTAL OPERATING COSTS

Mobile Tool International, Inc. used pollution prevention as part of a plan to reduce costs of operation as an alternative to an impending layoff. This medium sized, employee owned company in Westminster, Colorado adopted a “lay off wastes” program which asked employees and management to identify cost savings. As a result of energy savings, process changes (e.g. partial switch to powdered coatings) and other modification, the needed 12% budgetary savings were realized without an employee layoff. [7]

Documenting the total cost savings of pollution prevention often requires new accounting procedures. The Management Institute for Environment and Business is working with business schools to promote environmental accounting, design for the environment, life cycle analysis, and quality management.[8]

307 REFERENCES

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3. US EPA, Pollution Prevention 1997: A Nation Progress Report, Washington, D. C. Also, see http://www.epa.gov/opptintr/ChemLibPPN/08_09_96.txt.

4. Wood Furniture: The Clean Air Amendments of 1990 and Pollution Prevention Opportunities, The Northeast Waste Management Officials' Association (NEWMOA) and the Northeast States for Coordinated Air Use Management (NESCAUM), Boston, MA, August 1997.

5. The National Pollution Prevention Roundtable Fall Conference Proceedings, Washington, D. C., December 1995.

6. US EPA, Pollution Prevention 1997: A Nation Progress Report, Washington D. C.

7. The National Pollution Prevention Roundtable Spring Conference Proceedings, edited by Michele Russo, Washington, D C., April 1997. Also see http://www.mobiletool.com.

8. The Web site for the Management Institute for Environment and Business is http://www.wri.org/wri/wri/meb/.